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THE UNIVERSITY OF WASHINGTON

Arboretum bulletin

A JOURNAL OF GENERAL HORTICULTURAL INFORMATION
PUBLISHED QUARTERLY BY THE UNIVERSITY OF WASHINGTON
ARBORETUM FOUNDATION • SEATTLE, WASHINGTON 98105

No part of this BULLETIN may be reprinted without the authority of the Arboretum Foundation.

VOLUME XXIX, NUMBER 2

Summer, 1966

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COVER PHOTO:

Scene In Our Japanese Garden

PHOTO BY: DAVID METHENY, M.D.

Scenes in the Arboretum, III

Our Japanese Garden

Kenneth Sorrells*

It will be eight years next July since Mr. T. Moriwaki, the Superintendent of the Metropolitan Parks Division of Tokyo, stood on the site of our Japanese garden and asked that he might be granted the privilege of presenting preliminary ideas for the basic outline and construction of a Japanese garden.

Since the officers and directors of the Arboretum had for some 32 years thought that a Japanese garden would be a great addition to our magnificent Arboretum, his generous offer was quickly and warmly accepted. And so a Japanese garden committee was set up and steps were taken to find the finest Japanese landscape architect and designer to supervise the entire project. We all know now that it was determined that Mr. Juki Iida, a creator of over a thousand Japanese gardens, was selected to do our work.

Late in November of 1959 Mr. Iida, accompanied by his assistant, Mr. T. Kitamura, came to Seattle and photographed and sketched the Japanese garden area. Back again in Japan they worked together with five other landscape designers to prepare the 36 pages of plans which were used in the preparation and construction of our garden.

The actual construction of our garden started in March of 1960 with the Yorozu Gardening Company of Seattle as prime contractor. The Ishimitsu Company built the wooden structures and Richard Yamasaki handled the tremendous rock work.

Our garden covers an area of about 3-1/2 acres and at the time of its construction was the largest authentic Japanese garden outside of Japan.

In the building of the garden the creators first cleared the area then dredged and enlarged the ponds, brought in 9,000 yards of earth and built the twin mountains just south of the tea house. From Bandera on the Snoqualmie river Mr. Iida personally selected some 583 rocks, all of which were carefully wrapped in bamboo matting and handled with the utmost care to prevent scratching. Each was trucked to our site and placed in its proper position as already indicated on our plans and each was buried in the Japanese tradition, about two thirds of the rock being underground. All of these rocks weigh over a thousand pounds and some of the larger rocks reach the weight of almost eight tons. Smaller stones were also selected with equal precision and some were even shipped in to us from Tokyo.

The engineering in our garden is so well done that the water flow coming from the south from two different streams, less the evaporation from the lake, is balanced to within one quarter of an inch throughout its entire journey, falling free of our ponds through the creek that eventually reaches Lake Washington.

Those of you who have personally poured great amounts of money into your gardens will appreciate the cost of our garden when we state that our original estimate of $60,000 was only a fraction of our ultimate cost. As of last year our bookkeeping indicates the value of our garden nearing the $350,000 mark.

The plantings alone in the garden have almost doubled our original estimate for the entire garden. We have over 400 azalea bushes, some 300 rhododendrons and a great variety of evergreens many of which are natives of Japan. Eight kinds of Maple

---

*Mr. Sorrells has been actively interested in the Garden since its inception. As Finance Chairman of the first Japanese Garden Committee he spurred the drive to secure funds for its completion.

trees surround our Teahouse. There are twelve hand carved granite lanterns, all imported from Japan, and most over a hundred years in age. Up near our Japanese tea house there is a traditional stone washing basin with a handmade bamboo dipper for the owner's use. Our man-made structures include the two wooden entrance gates, two bridges each of a different type of construction, a moon-viewing stand and a wisteria trellis. At the present time we are hopeful that we can complete a Japanese resting house (Azumaya) atop the hill just west of the cherry tree grove. Like most projects we still must build a Machia which is a resting house for those who are preparing for the tea ceremony. This building would be erected just north of the tea house and with these two wooden structures our garden would be completed.

The completion of the garden is but the first step in the useful life of a project such as this. Complete authenticity must be preserved at all costs and for this purpose there was recently organized in our Arboretum, a Japanese Garden Unit (No. 86) whose main purpose is the perpetuation and completion of our authentic Japanese garden.

Although most of us visit the garden regularly and will for many years to come, the designers of our garden have looked beyond the immediate future and have built for us a garden, which with care, should last for thousands of years in the future. Ours is a stroll garden, a garden where each turn in the path provides a new view, a place for rest, contemplation, winter or summer, spring or fall. A garden designed for restful viewing. It is a fine example of the subdued Japanese garden designer's art, a remarkable result of careful designing and fulfillment. Come and visit it often.

Hardy and Not So Hardy Cyclamen Species

J. Leon Sealey, M.D.*

In our Pacific Northwest one of the hardy Cyclamen species is usually in bloom, unprotected, the year around. *Cyclamen* species and forms provide a useful and reliably hardy ground cover in deep shade and full sun, a color range from white to intense cyclamen purple (RHS chart 30) during the entire year.

I have found six of the fourteen species reliably hardy in my garden on the east shore of Lake Washington near Seattle.

The *orbiculatum* aggregate, with five or six distinct forms, commence blooming by mid-November, are always in bloom Christmas and New Year's day, are at their best from mid-December through February, and a final blossom may be seen on May day. Most *orbiculatum* forms, white and colored, are among the hardiest of the genus.

C. pseud-ibericum is one of the least known, its large, intensely colored blossom one of the finest of the genus. While reliably hardy it is generally expensive because it is not a reliable seed producer and demand exceeds the supply. Most forms are intensely fragrant and the blossom is generally evident from mid-February to mid-April.

C. repandum is readily available and the hardiest of the spring blooming species. It is usually in bloom by March 1, at its best most of the month of April and a few blossoms are to be seen in late May. It grows well from under small rocks.

A few *C. europaeum* are usually in bloom the year around but they are at their best from mid-June to early December.

C. neapolitanum is probably the hardiest of the genus. Both white and colored forms are readily available. It is reliably hardy

*Dr. Sealey is a specialist in Industrial Medicine, a member of the American Rock Garden Society and deeply interested in *Cyclamen*.

at winter temperatures approaching zero if protected by a three or four inch leaf mulch. It is usually in bloom before August 1, at its best in September and a few blossoms are to be seen in mid-October. Some Greek forms are fragrant.

Occasionally *C. cilicium* may be in bloom in early September; it is at its best in October and a few are in bloom in early December.

Five additional Cyclamen species I have grown successfully unprotected are *CC. libanoticum, balearicum, creticum, cyprium* and *graecum* but it has been my practice to protect from temperatures in the lower 20°F. range.

C. africanum, C. Rohlfsianum and most forms of *C. persicum* do not tolerate freezing temperatures.

The Cyclamen year, with the exception of *C. europaeum*, ends in May and starts in July. All Cyclamen mature their seed during the months of June and July, if one has not been careless and allowed newly hatched slugs to devour the seed pod. Cyclamen are readily propagated from seed; for optional germination the seed should be sown immediately upon harvest. Large corms with multiple growth eyes or stalks may be divided much as one divides a potato; however, this is not a reliable method of propagation because the cut surface of the tuber is frequently invaded by soil bacteria or fungi.

From seed to flower is usually a minimum of three years. A single well established corm may provide a lifetime of satisfaction and hundreds of blossoms each year. One *neapolitanum* plant in England has been reliably reported to have produced bloom for more than 100 years.

Most of the hardy species are available from commercial growers in the Pacific Northwest. The University of Washington Arboretum Foundation's fall garden sale usually has an excellent selection.

The floral color range of the genus, excluding certain horticultural forms of *C. persicum,* is within the relatively narrow intense magenta hue (R.H.S. chart 27) about the base of *repandum's* petal to petunia purple tints (R.H.S. chart 32) of *C. cilicium* forms. Most are confined to tints or shades near cyclamen purple (R.-H.S. chart 30). Some species are white, most have white forms. All have a tendency to blue somewhat as the flower ages, particularly if not fertilized.

The *Cyclamen* year may be divided in three parts by blooming season, fall, winter and spring. All auriculated *Cyclamen* (*neapolitanum, africanum, graecum, cyprium* and *Rohlfsianum*) are fall bloomers; the *orbiculatum* aggregate are winter bloomers; *repandum, creticum* and *balearicum* trio are spring bloomers; others bridge these seasons: *C. europaeum*, spring-fall; *C. cilicium,* fall-winter; *CC. persicum, libanoticum* and *pseud-ibericum,* winter-spring.

All of the *Cyclamen* species, except *europaeum* which is in more or less active growth the year around, tolerate drying out during June, July and August. None, particularly seedlings, tolerate dryness well during their active growth period.

Cyclamen species are entirely Mediterranean in their distribution except for a tongue of *orbiculatum* forms extending northeasterly into the Black Sea—Caucasus —Caspian Sea area of Anatolia, USSR and Iran.

Hybrids between species are unusual among the Cyclamen. *C. africanum* and *C. neapolitanum* appear to hybridize readily to form *C. X. Hildebrandii. C. X. Atkinsii* is probably not a true interspecific hybrid but a cross between two of the *C. orbiculatum* forms. True hybrids between *C. repandum* and *C. creticum* have been reported. I have among my Cyclamen what I believe to be a hybrid between *C. repandum* and *C. balearicum,* which first produced entirely white, fertile blossoms in 1966; the leaves are in intermediate grey green and the style somewhat exserted but not as much as *C. repandum.* Dutch hybrids between *C. balearicum* and *C. persicum* have been reported.

Unusual Trees in Seattle Parks

Roland Koepf*

Our area, here in the Northwest, is exceptionally blessed by nature with an equable mild climate conducive to the growth of plants, and of which trees, especially, play a prominent role in warranting our claim as the Evergreen State.

To be regretted, nevertheless, is the fact that civilization and nature too often come in conflict, and where humanity moves in nature is driven to retreat. Fortunately this retreat has not been complete, being stemmed to an ever increasing degree by the re-creation of a natural environment tailored to fit in with urban living and likewise please the discriminating. It can be said, moreover, that in this we are becoming more and more successful—witness our parks, arboretum, street trees and gardens, all heartening evidence of evergrowing public interest in preserving that precious environment.

During their relatively short period of existence our parks have gradually and steadily attained a wealth of planted stock, of which trees form a significant part. A great many of these introductions are foreigners—"immigrants" if you like. Strictly speaking, they are "exotics", coming well within the meaning of Webster's definition of the term, "introduced from a foreign land; not native". It is these which will be the subject of our discussion and to which we will be referring.

Closer acquaintance with some of these exotics, although in itself rewarding, will serve better to bring into sharper focus their value as contributions to our store of assets. To this end, therefore, this article is directed with the hope that in pointing out some of the interesting exotic trees in our parks we may have kindled that interest.

*Director of Horticulture, Forestry and Grounds Maintenance, Seattle Park Department.

Leschi Park, one of our oldest, offers considerable in the way of mature specimens. But in referring to this park we are always mindful of its rather unique history and find it impossible to resist including a brief description of it as a prologue.

During the days of the early settlers this spot was unflatteringly spoken of and known as "Fleaburg", being the favorite campsite for Indians hereabout. Leschi was their chief, and, although friendly at first toward the pioneers, he later led the attack in the "Battle of Seattle" in 1885, reportedly sacking and murdering as he retreated up the Duwamish Valley. He was later apprehended, brought to trial and hanged for his crimes.

The area was acquired by the Lake Washington Cable Railway Company in 1888, providing a lake terminal for the cable car line which followed the old skid road to Henry Yesler's sawmill on Puget Sound. A small park developed at the former Indian campsite to provide attraction and give impetus to cable car travel. We rather doubt that any serious intention was given to memorializing the chief in naming the spot Leschi Park, but venture that it was possibly an expedient in identifying the location.

The Seattle Electric Company, successor to the original company, continued to develop the park by extensive landscaping. In addition to these improvements a small zoo, picnic facilities, refreshment house and canoe house further increased patronage of the cable car line. Together with the hosts of pleasure seekers and regular ferry commuters the park became a lively and popular spot.

The cable cars and the ferries have now passed with the times and the crowds of people have gone elsewhere. The park remains, somewhat changed and quieter perhaps, but still a pleasant reminder of the heyday of yesteryear. The trees planted

and cared for by those early day gardeners have quietly grown to maturity and stand today as fitting tributes to their conscientious labors.

To those wishing to visit this park to view these trees, we suggest that the paved walk beginning opposite the south entrance to the parking lot parallelling Lakeside Avenue South be followed. The trees we shall describe are all conveniently located with relation to this walk.

ALBINO ENGLISH ELM
(*Ulmus procera argenteo-variegata*)

This will be the first tree we call to your attention, located immediately along Lakeside and about six or seven paces to the right of the walk which starts uphill into the park from here. We mention it especially because it is an unusual departure with the general run of elms and with which almost everyone is familiar. This one differs quite noticeably in that the foliage is prominently striped and spotted with white, a coloring not generally associated with the elm group.

DEODAR CEDAR (*Cedrus Deodara*)

To the left of the walk as you proceed into the park is a large Deodar Cedar measuring 85 ft. in height and slightly better than 3 ft. in trunk diameter. It is now seventy-five years old. This species, a native of the Himalayas, is one of three really true Cedars. The other two are Cedar of Lebanon (*C. libani*) of Asia Minor, and Atlas Cedar (*C. atlantica*) of North Africa.

Introduced into cultivation in 1831, it has well proven a worthy and favorite ornamental conifer for both parks and gardens throughout the temperate regions. It has been extensively planted in Seattle parks and numerous trees are to be found in Volunteer Park.

PORT ORFORD CEDAR
(*Chamaecyparis Lawsoniana*)

Paired with the Deodar, and just across the walk, is a fine specimen of Port Orford Cedar, slightly more than 72 ft. in height. In spite of its common name, it is not really a Cedar. Actually a cypress, it belongs to a genus called "Ground cypresses" which includes about a half dozen species found in Asia and America.

This species is found native nowhere else in the western hemisphere except in a comparatively small area along the southern coast of Oregon. It is a relative of the Alaska Cedar (*Chamaecyparis nootkatensis*). Numerous modifications from the native form have been developed through cultivation and the species has been divided into countless varieties by nurserymen who sell it under so many different names that its identity has become all but lost in handling.

HEDGE MAPLE (*Acer campestre*)

To the north and slightly to the west, standing alone at some distance apart in the lawn, are two good examples of Hedge Maple. They are compact, almost round headed trees with quite small trilobed leaves—not very tall. Introduced into cultivation from Europe and western Asia, where it is native, it has been very extensively used as a street and avenue tree, principally through reason of its compactness of growth and orderly habit.

These trees you see here have never needed pruning to control height or shape, a necessity with most of the Maples, especially where used as street trees. We cannot but speculate how much labor and expense might have been avoided if this species had been used in place of the larger and ranker growing species so often found in Seattle's streets.

CAMPERDOWN ELM
(*Ulmus glabra camperdownii*)

Proceeding along the walk, and on the left, quite close to the round pool, you can see a very curious small thick-trunked tree with rounded head and pendulous branches. This is the Camperdown Elm, a very dwarf form of the Wych Elm, and also known as the Scotch Elm, a native of Northern and

Giant Sequoia tree in Leschi Park.
Ht. 104′, Circ. 17′.
Fig. 6 Photo by: William Eng

Central Europe as well as Western Asia.

Closer inspection of this tree will reveal a most astonishing branch formation. Due to its age and growth its normally crowded branches have literally run out of room! They have, consequently, joined together by self- inarching or grafting, almost completly having lost their form as limbs, to become a composite trunk. Occasional loopholes can be seen where growth has not yet filled the gaps between limbs.

GIANT REDWOOD (*Sequoia gigantea*)

Also known as the California Bigtree, this specimen is easily the most commanding of the trees to be seen in Leschi Park. Located on a slight incline directly west of the pool, it towers more than 100 ft. above its base. Its thick tapering trunk measures 4 ft. in diameter at arm height. Though very young in years for its species, having been planted in 1892, it already is assuming impressive size and distinction.

The Giant Redwood is one of several species of ancient origin and which in past geological periods were widely distributed over the globe. All but swept into extinction and oblivion by the glacial eras, only two species remain in our time, each confined to a limited area in California. This tree is found on the western slopes of the Sierra Nevada Range and is the outstanding and primary attraction of Sequoia and Grant National Parks. Some of the trees there have been estimated to be as much as 5000 years old.

We have used this species frequently in plantings in the Seattle Parks. Good examples, though by no means the age and size of this one, can be seen in Volunteer, Woodland, Green Lake, Denny and Lincoln Park. As some confusion often occurs in distinguishing this Redwood from its close relative, the Coast Redwood (*Sequoia sempervirens*), of which we also have planted extensively in the parks, some slight clarification might prove helpful in telling them apart.

The Giant Redwood is distinctly pyramidal of habit, trunk very thick at the base but tapering rapidly upward. Its long drooping branches have needles that are scale-like, rarely as much as a half inch long, rigid and pointed and overlapping each other like tiny shingles along the twigs.

The other species, California or Coast Redwood, which is found in the fog belt along the northern coast of California, is the tree famous for its height. Trees have been known to attain the height of as much as 350 ft. Timber from this species commands great commercial value and figures prominently in the lumbering industry of California. So much so, in fact, that presvation of the species may become threatened but for the persistent efforts of conservation organizations.

While we have no specimen of the Coast Redwood in Leschi Park, a good one can be seen at Madrona Park, just a short distance of a few blocks to the north along the lakeshore. It is located adjacent to Lake Washington Boulevard, the roadway making a slight curve to avoid it near the foot of the East Spring Street.

TULIP TREE (*Liriodendron tulipifera*)

A very fine mature tree will be found quite close to and north of the Giant Sequoia of Leschi Park. It measures 90 ft. in height, 3-1/2 ft. in diameter, and is about the same age as the giant Sequoia. It is a native of the Eastern States, ranging between Massachusetts and Wisconsin and south to Florida and Mississippi. There are only two species, the American form which is the only one cultivated, and another one native to China.

Among all our native American trees this one species is truly outstanding and has impressed itself upon popular attention in many ways. Variously called Yellow Poplar, Whitewood, as well as Canoewood, it was formerly quite extensively used as

(*Continued on Page 54*)

Acer campestre in full bloom, Leschi Park. Ht. 42′, Circ. 5′5″.
Fig. 7 Photo by: William Eng

Progress Report of the Joint City-University Arboretum Planning Committee

Introduction

The University of Washington Arboretum is in the midst of a period of rapid and dramatic change. Not all of this is for the better, considering past and future reductions for expressways. However, the funds paid by the State of Washington Department of Highways for land taken will make possible substantial improvements in the remaining area of the Arboretum, including some amelioration of the effects of expressway encroachment. The Sasaki Plan for long-range development has been completed in preliminary form and certain of its recommendations are now being studied for implementation.

Because of the widespread interest in the changes taking place or contemplated in the Arboretum, the following progress report has been prepared for participants and friends and supporters of its varied programs. Further reports will follow when there is new information concerning any matter discussed here.

History

The joint City-University Arboretum Planning Committee was organized in May, 1963, under terms of a City-University agreement, to plan the expenditure of funds to be received from the sale of Arboretum land to the State Highway Department. The committee includes representatives of the City Park Department, Planning Commission, and Engineer's Office, representatives of the Arboretum Foundation, and the University Vice President for Business and Finance (chairman), Dean of the College of Forestry, University Architect, Arboretum Director, and a staff member in the Office of University Relations. The function of the Committee is to plan capital projects in the Arboretum and recommend these to the University and the City Council.

On December 20, 1963, a trust agreement was entered into by the City of Seattle and the University of Washington to set terms for disposal of $501,999 paid by the State for approximately 47 acres of Arboretum land taken for the Evergreen Point Bridge approaches and interchanges. Under terms of the agreement the University was reimbursed $25,963.60 for its costs in removing certain shrubs and trees from the property acquired by the State. The remainder, which with accrued interest totalled $476,035.40, was deposited in a specially created Arboretum Capital Improvement Trust Fund to be "expended only for capital improvements within or expansions to the Arboretum . . . and said funds shall be expended only in accordance with a program of Arboretum capital improvements concurred in by both the Seattle City Council and the Board of Regents of the University of Washington; provided, that the University of Washington may expend from said Arboretum Capital Improvement Fund such sums as may be necessary to pay fees of expert consultants who may assist in the development of an Arboretum Improvement Program." Less expenditures for consultants' fees, plus accrued interest, as of January 31, 1966, the trust fund contained $489,727.49.

Further compensation is expected from the State for additional lands to be taken for the Thomson Expressway. The University has requested compensation in land, but if any of the payment is in cash it may be added to the trust fund when received.

The University has received or will receive certain other monies and has asked the City-University Committee to coordinate planning for these funds as well, though responsibility for their expenditure lies with the University alone. On August 14, 1959, the late R. D. Merrill gave the University $42,500 for construction of a floral hall in the Arboretum; with accrued in-

terest, on December 31, 1965, this fund contained $52,365.38. In January, 1961, the University received a gift from Mrs. Perry B. Truax for an Arboretum administration building, and a bequest of $5,000 from O. B. Thorgrimson for the same purpose. The Arboretum Foundation has accumulated an additional $75,000 which might be available for construction of a floral hall. An estate now in probate contains a large bequest to the University for a floral hall and accompanying facilities. It will be some time before the University receives final distribution of this estate.

The first action of the Committee upon its formation in 1963 was to compile a list of desirable capital projects. Having done so, it became evident that before individual projects could be discussed the 1935 Olmstead Plan for Arboretum development needed to be updated and revised. In January, 1964, the firm of Sasaki, Walker and Associates Inc., was engaged for this purpose. In the spring and summer of 1964 Professor Hideo Sasaki and associates visited the Arboretum, met with the Committee, and completed in preliminary form a long-range development plan that was approved in principle by the Committee.

The Sasaki Plan contains many imaginative suggestions that will greatly enhance the beauty and utility of the Arboretum while preserving its unique character. Because the plan is not yet in final form, a full description will be left to a later report.

In October, 1964, a subcommittee on priorities recommended that funds immediately available or firmly in prospect be devoted to the following projects envisioned by the Sasaki Plan:

1. Administration building with multipurpose auditorium seating 300
2. Development of access, parking areas, landscaping, and lighting for administration building-floral hall complex.
3. Utility services to the site of the complex.
4. First-stage development of shoreline from Montlake Park to Foster's Island
5. Pedestrian crossing of Thomson Expressway in vicinity of Boyer Avenue
6. Conditioning and planting of west side of Arboretum
7. Restroom facilities with information booth for south end of Arboretum near Japanese Tea Garden

However, it now grew apparent that because of existing and potential litigation the final routing of the Thomson Expressway could not be settled at an early date, possibly not for years. The Committee therefore decided to defer completion in final form of the Sasaki Plan until the Expressway route was known and meanwhile to focus attention on the north end of the Arboretum where the route is not in question. Items 5, 6 and 7 above have therefore been temporarily tabled.

Land Acquisition

Though not included in the above list because of the difficulties involved, there is strong feeling in the Committee that acquisition of land to replace that taken by the state has top priority. However, adjacent land is not readily available and is quite high in cost. Nevertheless the Committee continues to explore the possibilities.

Aditional land will be taken from the Arboretum for the Thomson Expressway. In its testimony at the Thomson Expressway hearings the City Council held on May 27-28, 1965, the University recommended that the City ask the State to replace land with land, rather than money. Following are excerpts from the University statement:

"Suitable land contiguous to the Arboretum should be substituted for the land within the Arboretum appropriated . . .

"The most suitable land to be substituted for the land that will be taken by the Thomson Expressway would be that land presently being used as a play field at the south end of the Arboretum known as the Madison Street Playfield.

"It is further contended by the University that the substitution theory should be carried out completely and that contemporaneously with the development of the

Madison Street Playfield as a portion of the Arboretum the City should develop a new playfield in the same general vicinity. "Finally, it is the University's contention that inasmuch as access to the Arboretum will be substantially reduced by the construction of the Thomson Expressway, pedestrian access should be provided over the Thomson Expressway upon its completion by the provision of an overhead pedestrian bridge in the vicinity of Boyer Avenue so that residents to the west of the Thomson Expressway could have pedestrian access to the Arboretum."

The City Council has not expressed an opinion as yet on the feasibility of adopting the University's suggestions as a basis for negotiation with the State.

Shoreline Development

One of the more interesting projects in the Sasaki Plan is the creation of a nature trail from Foster's Island to Montlake Park and the Museum of History and Industry, passing through the marsh adjacent to the area now used by the Army Corps of Engineers as a log dump.

Islands would be constructed by dumping material to form floating lumber mats, these to be topped by dirt fill. All existing waterways would then be re-excavated, footbridges constructed, and natural vegetation re-introduced. Existing access by boat would thus be continued, but in addition pedestrians could walk through a nature preserve from the Arboretum to Montlake Park—and eventually via Montlake Bridge, to similar paths and wild areas planned by the University on the west shore of Union Bay.

Approval for this construction has been obtained from the State Department of Natural Resources and application has been made to the U. S. Army Corps of Engineers. The Corps is not expected to present any objections.

In theory the project could proceed at any time. Again, though, the Thomson Expressway is a factor because the tube by which it is proposed to cross under Union Bay will require heavy construction activity in the vicinity of the nature trail. For that reason it may be best to defer shoreline development until the tube is complete—unless, as is possible, date of completion lies an excessive period of time in the future. In view of present uncertainty, the Committee has not as yet recommended a starting date for the shoreline project.

Arboretum Floral Hall Center

The Committee early agreed that very high priority among projects immediately practical should be given to construction of a new center for Arboretum activities.

A first consideration was siting the center. After study of various alternatives suggested by Professor Sasaki, on November 22, 1965, the Committee approved a site in the vicinity of the present Arboretum service buildings. The prime determinant influencing the decision was to subtract as little land as possible from planting areas and to minimize the impact on the natural character of the Arboretum. The Committee feels that the Center can be of great benefit to full use of the Arboretum, but that the principle purpose of the Arboretum—to grow trees and shrubs—must be kept clearly in mind, both in siting and in designing the buildings involved.

Another factor weighing in favor of this site is its relative accessibility to transportation routes and mass parking facilities. The Committee is in unanimous agreement that only a very minimum amount of Arboretum land should be devoted to parking areas. By utilizing roadways as well as lots, spaces for approximately 300 cars might be provided adjacent to or reasonably near the Center; to serve high-attendance events, other parking must be found. Among the possibilities is the University's south stadium lot, perhaps in combination with shuttle busses.

In 1962 the office of the University Architect prepared a preliminary project

(*Continued on Page 52*)

Planting Along Oregon Highways

Mark H. Astrup*

If we can believe the numerous complimentary letters received that some measure of success has been achieved by planting, thus adding to the pleasure of drivers of Oregon's highways, it has not been achieved entirely by chance. Rather, it has been achieved by adherence to sound landscape design principles, planting policies and practices.

Let's not belabor that theme, but let me develop or list a few simple guide lines. The first, beginning with location and construction, is conservation of natural features, be they outstanding scenic views, rock outcrops, existing trees and shrubs, or what have you, that will merge the highway into the landscape naturally yet provide interest and enjoyment to the highway user. This principle may entail exhaustive preliminary study and planning before a route is finally selected. Frequently these are not readily apparent to the traveler but they are fundamental to fitting the highway into the landscape. And here is the paramount clue to successful planting of the roadside; violate not the broad basic characteristic of the landscape. This suggests a policy that dictates the type of planting employed and forcibly suggests the value and appropriateness of using plant material indigenous to the locality.

There are two schools of thought relating to the use of plants indigenous to the locale in highway plantings. The adherents have logic on their side and presumably the most practical approach, if a feeling of naturalness is desired. The alternate school holds that the plant that best fits all requirements should be used whether it is native or not. They make the point that native materials are not used exclusively *for highway construction,* so why for highway planting? Oregon has used native plants in rural locations as a general rule, but does of necessity use a wide range of "ornamentals" in urban plantings.

I say "of necessity" advisedly, for even in this State, favored by a large nursery industry, the obtaining of our requirements is becoming increasingly difficult. The supply of native plant material in the quantity required is always a formidable obstacle. The retail market for them is restricted and thus nurserymen are hesitant in propagating them in quantity. The alternate is using collected stock; not altogether satisfactory, our experience dictates. But, if necessary, small plants should be specified as they are far easier to establish. That principle holds true in all plantings. Admittedly, maintenance practices and trained personnel have lagged behind the design capabilities of our professional landscape architects. Therefore, one of the cardinal principles in highway planting design is the placement and choice of plant materials that will reduce maintenance, and I might add that require the minimum of care. Large groupings of trees and shrubs to produce mass plantings in harmony with their surroundings are the most effective and tend to build maintenance into the roadside.

It is also true that we seldom, if ever, have ideal gardening conditions for the growing of plants—the establishment of a vegetative cover to clothe raw cut and fill surfaces and blend the intruding highway into the landscape is, perhaps, the most glaring example. Highway landscape architects oversee the planting of untold thousands of subsoil acres each year. Normally grass is used but ofttimes groundcovers or shrubs follow as the permanent solution. Consequently, good horticultural practices, including special soil amendments and fertilization, have been found to be a must

*Landscape Engineer, Oregon State Highway Department

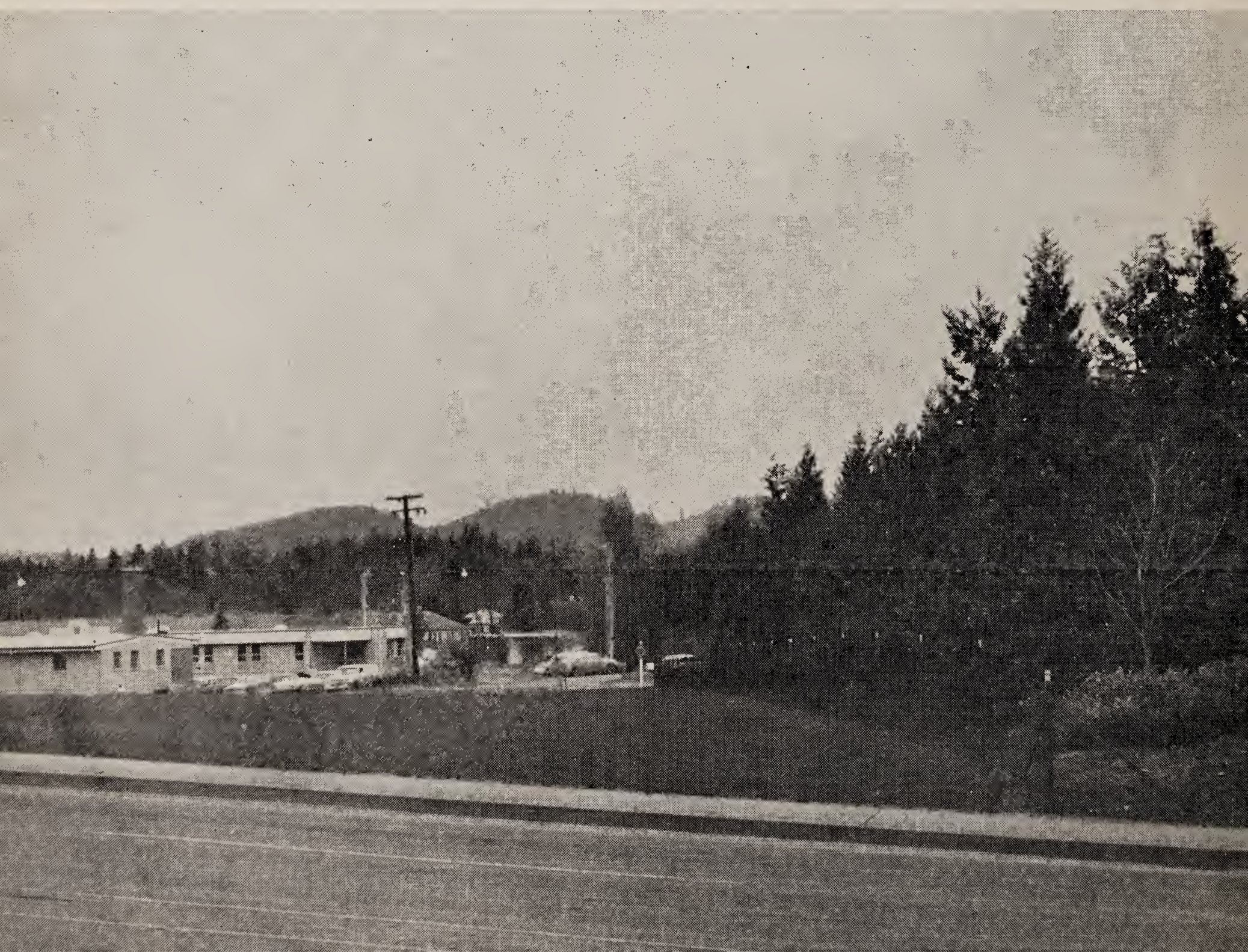
in planting specifications. Normally this includes a thorough cultivation of soils that may have been compacted by heavy construction equipment, adequate sized planting pits, augmented by fertilizers and imported topsoil backfill if the existing soil is unsatisfactory.

Practically all of our plantings have functional justifications. These include planting to assist in the direction of traffic movement, to reduce or eliminate the disturbing glare of headlights from opposing traffic, to erect barriers to unauthorized median crossings, to plant out objectionable views or to accentuate desirable features. This does not mean that they do not have aesthetic secondary or even primary values, but "aesthetics" and "beautification" have been skeletons hidden in the highway architect's closet until very recently. Perhaps they should remain so, for "beautification" could regrettably become the errant swing of the pendulum into gardenesque effects in highway plantings.

Oregon's experience, based mainly on Western Oregon plantings, has shown that many of our native plants are admirable subjects in highway planting. Bearberry (*Arctostaphylos Uva-ursi*) has proven to be the best groundcover on hot, dry exposure in Western Oregon. Oregon grape, fortunately Oregon's State Flower, has proven remarkably tolerant to a variety of soil and exposure conditions and has been used extensively. Other native shrubs found useful include Snowberry, Douglas Spirea, Western Thimbleberry, Western Azalea, Rose (species), Winter Currant, Gordon Mockorange, Redosier Dogwood and Creambush Rockspirea. Broadleaved evergreens used successfully include the Rhododendron, Pacific Waxmyrtle, Box Blueberry, Salal and the unpredictable Manzanitas.

Screen planting of Incense Cedar, Roseburg, Oregon. Object to reduce noise to hospital, Left of photo.

Fig. 8 Oregon State Highway Photo



We have had less success with our deciduous trees, with the exception of Vine Maple which has proven adaptable to a wide range of conditions. Although capricious, our native Dogwood has few equals in bloom or in fall coloring. The Bigleaved Maple seems to dislike moving, and the Oregon Ash just languishes in perversity. Our oaks are excellent trees but unobtainable and we have been forced to substitute other than native oaks even in rural plantings. Native conifers seem to transsatisfactorily the Lawson Falsecedar in our plantings and we give it the highest rating where a large conifer is desired. Shore Pine and Douglas Fir are also particularly adaptable and useful. Other native conifers used less generally include the Eastern Arborvitae and its columnar variant, the true firs, Pacific and Mountain Hemlock, Pacific Yew and Sierra Juniper. Native broadplant better than our deciduous trees. California Incense Cedar has supplanted most leaved evergreens have proven a problem. There are few of them and difficulties have been experiencd in moving Pacific Madrone. Unfortunately, we have never been able to obtain plants of our native Evergreen chinkapin, (*Castanopsis chrysophylla*), an excellent small tree, nor have we used either Canyon Live Oak or Tanoak, (*Lithocarpus*).

Watering systems are impractical of installation other than under urban conditions. Under present Federal regulations, our contracts include a full growing season's period of plant establishment before a planting contract is judged complete. We have found that even under the favorable growing conditions found in Western Oregon an additional two years of watering is necessary to properly establish most

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Planting screening highway maintenance buildings from view of U.S. 99 traffic entering Eugene, Oregon from south. Trees in media are pyramidal oaks.
Fig. 9 Oregon State Highway Photo

The Oldest Living Plants

J. J. Willaman*

We humans like to establish the superlatives in everything—the biggest, the fastest, the hardest and so on. In the plant world we have tried for many decades to establish the oldest individual. This has not been easy. We must depend entirely on circumstantial evidence, since the beginning of many individual plants goes far back of any historical records. As we shall see, the contenders for being the oldest thing are in the western hemisphere and here any historical records are of comparatively trivial age.

The most useful and accurate way of measuring the age of a tree is, of course, to count the annual rings. Although there are some pitfalls in the method it is in general reliable. It is the basis of the science of dendrology developed over some decades in the southwestern area of this country by Dr. D. A. Douglass of the University of Arizona (Schulman, 1958). Using trees of known age and comparing the width of the bands with the known amount of annual rainfall during the life of the tree he established that wider bands occurred during years of higher water supply and narrower bands during years of lower water supply. The relation is good in the semiarid southwest where apparently rainfall is the critical factor for growth. In more humid areas other factors come into the picture and the system is untrustworthy. The irregular sequence of rainfall was reflected in a sequential pattern of widths of annual rings. By comparing patterns of trees of known age with the patterns in the beams of cliff dwellings of overlapping age he set up a calendar by means of this system of dendrochronology.

*Reprinted with kind permission from the Morris Arboretum Bulletin, Vol. 16, No. 4, December 1965.

Cypress of Tule

This specimen of Mexican cypress (*Taxodium mucronatum* Ten., closely related to the bald cypress, *T. distichum* (L.) Rich.) is growing in the Indian village of Santa Maria del Tule, near the city of Oaxaca (Randall and Edgerton, 1939). It is a huge tree, only about 118 feet tall but with a trunk diameter of about 36 feet. The cross section contour of the tree is so extremely irregular, however, that the true diameter and girth are difficult to assess. In fact, some botanists think that there has been a fusion of three trunks. For these reasons the age has been variously estimated as 4,000 to 10,000 years.

Sierra Redwood

Sequoiadendron giganteum (Lindl.) Bucholz is not as tall as the coast redwood, *Sequoia sempervirens* (Lamb.) Endl., but it is more massive. Probably the best known, and possibly the most massive, of the Sierra redwoods is the General Sherman tree in the Sequoia National Park. Its statistics are impressive—272 feet high, 32 feet in diameter, breast high, total weight of both above ground parts and roots 6000 tons, diameter of root spread 400 feet, first branch 130 feet from the ground and 6 feet in diameter (Baker, 1943.). When it comes to its age the data are not so accurate. The coring instruments used to get a sample along the radius of a tree cannot reach the center of General Sherman, even if it were permitted. The best estimates from nearby fallen trees are 3000 to 4000 years.

Bristlecone Pine

By the 1950's Dr. Douglass had pushed his tree ring calendar back to about 700 A.D. He was still not satisfied, of course,

and enlisted the services of Dr. Edmund Schulman (Schulman, 1958). He searched the trees of the western mountains, examined hundreds of specimens of many species, and finally reached the working hypothesis that the oldest trees were those living under difficult conditions of moisture supply and that the patterns of their minute rings showed high sensitivity to varying rainfall. In the White Mountains of California they found many old, gnarled and worn specimens of *Pinus aristata*, Engelm. Many were 4000 years old, and the one they came to call Granddad was 4600 (Schulman, 1958). Among trees, at least, this bristlecone pine is probably the oldest individual plant.

Box Huckleberry

This contender for the title of oldest plant is not a tree. It is a low, evergreen, ground-cover shrub with edible fruits like huckleberries and leaves like box. It is variously called box huckleberry, ground huckleberry, bear huckleberry, but *Gaylussacia brachycera* (Michx.) Gray by botanists Its occurrence is extremely limited: Pennsylvania, Delaware, Maryland, Kentucky and Tennessee having two or three locations, and Virginia and West Virginia having a few hundred in one area. (Wherry, 1934).

The species has been known since about 1790 (Adams, 1949). In 1845 a specimen, about 8 acres in extent, was discovered in Perry County, Pennsylvania. It did not attract any particular attention until 1918, when Dr. F. V. Coville made extensive studies and came to the conclusion that this "colony" is actually a single plant. It extends itself by stolons at the rate of some six inches a year. Calculation showed that this plant is about 1200 years old. Then in 1920 another plant was discovered along the Juniata River a few miles from the first one. It extends for 1-1/4 miles along the northern slope of a mountain. The estimate of its age is a startling 13,000 years.

Now for the inevitable question. "What is the evidence that these apparent colonies are indeed just individual plants?" There are four lines of argument (E. T. Wherry, personal communication):

1. By and large over the whole area the stolons radiate from a center.
2. Seedlings are extremely rare, occurring only where two plants are close enough for cross pollination. This indicates self-sterility. It was proved by taking pollen from a Pennsylvania plant and placing it on flowers in Delaware. Some vigorous seedlings were obtained.
3. The plant never straddles a stream or a wash because the stolons can't cross and there are no seedlings to grow on the other side.
4. There is unusual uniformity in size and shape of leaves and fruit. A true colony made up of seedlings would have much more heterogeneity.

In conclusion: it is almost a toss-up among the three tree species as to which contains the oldest living individual because of some uncertainties, but *Pinus aristata* with its Granddad tree at 4600 years is probably the winner. But if we accept the lines of evidence for *Gaylussacia brachycera*, (fig. ....) no doubt the oldest living single plant is the 1-1/4 mile long box huckleberry, with 13,000 years. It is possible that there was no human being in Pennsylvania when that plant started out.

Flowers of the Box Huckleberry *Gaylussacia brachycera*.
Fig. 10 Photo by: Ruth McV. Allen

Vegetative Propagation of Deciduous Azaleas

Esther Berry

The deciduous azaleas are plants of exceptional garden value. The named clones of the Exbury and Knaphill types are especially beautiful and certainly deserve their present popularity. However these clonal forms must be propagated vegetatively and this is not always easy. They are generally considered to be rather difficult to root and having rooted they may fail to break dormancy the following spring.

Each propagator seems to have his own technique for coping with these problems, and procedures which are successful one year may fail the next. So, it is with tongue in cheek that I offer these suggestions which have been successful for me—so far.

The matter of first importance is the time at which the cuttings are taken for this is very critical. The plant tissues must be soft but just beginning to have some firmness; there is little chance of any success once the stems harden or become woody. Usually early to mid-June is about right for most kinds in most years. Another guide that might be useful is the length of the new growth. Some propagators believe that cuttings should be taken with a heel that includes a thin layer of the old wood and there may be some advantage in in doing so. If this is to be done, then the cutting must be taken when the new growth is two and a half or three inches long. However, stem cuttings which were taken from longer shoots, cut at the leaf node, have rooted well for me. In either case, all but two or three leaves should be removed and if the leaves are quite large they may be cut in half. The leaves should be removed carefully so that the stem is not injured and the stem cut should be trimmed so that no "hangnails" are left. Usually better rooting occurs if the cuttings are scarified by taking a small sliver about one-half inch long from the side and near the base of the stem. It should not be cut all the way to the base or the skin may peel loose. If there is any difficulty in making this scar shallow enough or in peeling the skin of the cutting, it is better to omit this part of the procedure. The plant tissues are so soft that it is necessary to exercise care to avoid damage. A new, single edge razor blade is an excellent tool for this purpose.

The cutting should now be dipped in Hormodin # 3 or # 2, whichever you have, and it is ready to insert into the cutting. Firm it only enough to hold it in place. They should be placed about three inches apart in the flat for they will stay in this flat until they have made new growth the following spring. After the flat is filled, it should be flooded with water to make sure that the cuttings are settled firmly in the medium. A compost of two parts sharp sand and one part peat, is a satisfactory rooting medium. A flat which is four inches deep should be filled and leveled to about one inch from the top.

The flats may now be placed in a closed frame in full sun but with the sash shaded. I have always used a little bottom heat but at this time of year I doubt that it is really necessary. The important thing is to maintain high humidity so that no wilting will occur. This can be done with a closed frame and frequent watering. The alternative is an open frame with constant mist. This has given me better results and it is quite easy to manage. A mist fogging nozzle can be fitted into a short length of pipe which can be attached to a garden hose. The pipe is then suspended from upright 2x4s about 4 feet above the cuttings, and it is ready to use. One nozzle will cover an area of about four feet in diameter. It should be turned off at night to

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*Timely information from our ever faithful Mrs. (Robert) Berry of the Bulletin Editorial Board.

S. Dwyer

North Cascades Study Report

Joint Statement of the Secretaries of Agriculture and Interior

December 29, 1965

This report is the result of a two and one-half year study to determine how the Federal lands of the North Cascade Mountains in the State of Washington can best serve the public interest.

The study team was composed of two representatives from the Department of Agriculture, two representatives from the Department of the Interior, and a chairman selected by the two Secretaries—who is from the Bureau of Outdoor Recreation. Included were Dr. George A. Selke, consultant to the Secretary of Agriculture; Arthur W. Greeley, Deputy Chief, Forest Service, USDA; George B. Hartzog, Jr., Director, National Park Service, USDI; Dr. Owen S. Stratton, consultant to the Secretary of the Interior; and Edward C. Crafts, Director, Bureau of Outdoor Recreation, and Chairman of the study team. The team was directed to "explore in an objective manner all resource potentials of the area and the management and administration that appears to be in the public interest."

The North Cascades Study Area embraced all the National Forest land north of the White Pass road in Washington. It included the Mount Baker, Wenatchee, Snoqualmie, and portions of the Okanogan and Gifford Pinchot National Forests. Also included was Mount Rainier National Park. The total area involved was 6.3 million acres.

We commend the study team for its work and join in the hope that the report will receive careful study by all interested groups. Congressional action will ultimately be required for about half of the key recommendations and we have not yet agreed on recommendations to be sent to Congress.

Use of the North Cascades area has been the subject of great interest by many groups for over 30 years. The findings of this study will enable these groups to take an objective look at how the public interest can best be served in the North Cascade area.

The report contains 21 recommendations, most of which were unanimous.

The recommendations on which the members were unanimous would establish four new wilderness areas totaling 720 thousand acres, enlarge the Glacier Peak Wilderness Area, provide for a small addition to Mount Rainier National Park, provide more coordinated management between the National Park and surrounding National Forest land, declassify three areas now listed by the Forest Service as "Limited Areas" and thereby make available for commercial use about 1.5 billion board feet of sawtimber, provide for a system of scenic roads and trails, and designate portions of the Skagit River as a wild river.

The team members were in disagreement with respect to the management of one part of the Study Area. One member recommended creation of a National Park out of existing National Forest land; two members favored creation of a larger National Park; and the other two members recommended establishment of a National Recreation Area.

The heart of the issue is what to do with the National Forest area north of Cascade Pass.

Essentially three alternatives are proposed involving major changes in the Mount Baker, Wenatchee, and Okanogan National Forests.

The chairman recommended a new National Park which would include the Picket Range country, Ross Lake, and the Eldorado Peaks-Stehekin Valley vicinity. Combined with this would be Forest Service administration of (1) Glacier Peak Wilderness Area; (2) the portion of the present

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The Arboretum Bulletin

Vol. XXIX, No. 2 Seattle, Wash. Summer 1966

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Books Acquired in 1965 For Arboretum Library

Gardens of Italy, by Frances Margaret McGuire; M. Barrows & Co., New York (1964)

Flore Laurentienne, by Frere Marie-Victorin; Les Presses de'l'Univ. de Montreal, Que. Canada, (1964) 2nd Edn.

Die Nadelgeholze, by Gerd Krussmann; Paul Parey, Berlin und Hamburg, Germany (1960) 2nd Edn.

Flora Europaea, Vol. 1, Edited by T. G. Tutin, Sponsored by Linnean Soc., London; pub. Cambridge University Press (1965)

Rhododendron & Camellia Year Book, R.H.S., Vincent Square, London (1965)

Las Pinaceas Mexicanas, by Maximino Martinez; Universidad Nacional Autonoma de Mexico; (1963) 3rd Edition; Gift of Mrs. Phillip Macbride, Woodinville, Wn.

Propagation of Trees, Shrubs and Conifers, by Wilfrid G. Sheat; Macmillan & Co., Ltd., London, Eng. (1948); gift of Mrs. J. S. Baker, Bellevue, Wn.

The Heather Garden, Fred J. Chapple; W. H. & L Collingridge Ltd., London, Eng.; Revised 2nd Edn. (1964); gift of Mrs. David Metheny

The Gardener's Bug Book, by Cynthia Westcott; Doubleday & Co., Inc., Garden City, N.Y.; Third Edn. (1964)

Rhododendrons & Azaleas, by Judith Berrisford; St. Martin's Press, N.Y.; (1964) Sent for Review

The Ivy, Its History, Uses and Characteristics, by Shirley Hibberd; R. Barrett & Sons; London (1872)

Plantarum Imagines et Descriptiones Floram Russicam, by E. R .Trautvetter; Monachii (1844)

Tree Flowers of Forest, Park and Street, by Walter E. Rogers; Appleton, Wisconsin (1935)

Pleasures of Herbs, Audrey Wynne Hatfield; St. Martin's Press, Inc., New York (1965) Sent for Review

South African Wild Flowers for the Garden, by Sima Eliovson; Howard Timmins, Cape Town, Union of S. Africa; 3rd Edn. (1960); gift from Dr. and Mrs. David Metheny.

Japanese Floral Art, Symbolism, Cult & Practice, by Rachel Carr; D. Van Nostrand Co., Inc., Toronto, Canada. Gift of Mrs. Neil Haig, Seattle, Wash.

Great Gardens of the Western World, by Peter Coats; G. Putnam's Sons, New York (1963) Gift of Unit #12

Landscape Gardening in Japan, by Josiah Conder; Dover Publications, Inc., New York (1964). Gift of Mrs. Clifford Barnes.

Horticultural Dictionary in Eight Languages, Editor J. Nijdam, Interscience Publishers, Inc., New York (1965)

Institutiones Rei Herbariae, 3 vols., by Joseph Pitton de Tournefort; Paris 1700-1703. Gift of Unit #8.

Icones Plantarum Omeiensium, Vol 2, No. 1; Edited by Wen-Pei Fang; Chengtu, China (Dec. 1945). Gift of Unit #8.

The Wild Cascades, Forgotten Parkland, by Harvey Manning; Sierra Club Exhibit Format Series, Mills Tower, San Francisco, Calif. Edited by David Brower (1965)

A Gallery of Flowers, by Germain Bazin, Chief Curator of the Louvre, Appleton-Century, New York (1960)

Climbing Roses, Old & New, by Graham Stuart Thomas; Phoenix House, London, Eng. (1965)

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Planting Along Oregon Highways

(Continued from Page 43)

plants. With the intensive plantings used on major interchanges and on urban freeways, a water system is a necessity. The numbers of plants used would be entirely impractical to water by hand.

Again, under these urban conditions, we are using a large variety of plants. We use a generous amount of groundcovers, both vines and shrubs. In fact, to live with Horsetail, as there was no practical way to eliminate it in plantings until recently, we were planning to give preference to shrubs. Watering and weeds in endless variety are the big problems of maintenance, particularly in the first critical years. Selective chemicals have proven to be a useful tool in skilled hands. We use two to three inches of bark or sawdust mulch to conserve moisture and reduce weeds, but mulch is only a palliator, not a cure.

After twenty years of struggling and observing highway plantings, two principles stand out. First, they must be designed wisely; and, second, they must be maintained under the direction of competent, trained horticulturists. We have learned considerable in Western Oregon plantings, but a whole new horizon looms as we begin to consider the different conditions that will confront us in Eastern Oregon.

This is your Arboretum, kept alive by your support

We are pleased to welcome the following new members (February 1 through May 24, 1966) *Sustaining*—Marianne King, Mrs. John P. Stein, Jr. *Annual*—Mr. & Mrs. Kaoru Akiyama, Mrs. Kazuo Arai, Miss Patricia Baillargeon, Mrs. Charles D. Bakeman, Mrs. Edwin E. Barnes, Walter Batiuk, Mrs. A. H. Beam, Mrs. Dale Bennett, Mrs. Arthur A. Binnie, Mrs. Curtis Bostwick, Richard A. Brown, Mrs. Robert J. Brown, Dr. Bertram F. Bruenner, Mrs. Tom Ciarlo, Mrs. Evelyn Cissna, Mrs. S. William Conroy, Mrs. Howard A. Coombs, Mrs. Edwin L. Dale, Mrs. Robert H. DeBoer, Mrs. Eric B. Denton, Mrs. W. J. A. DeRuyter, Mrs. Stuart E. Douglass, Mrs. G. M. Dyer, Mrs. Gary F. Finke, Mrs. Virgil O. Ford, Mrs. Phyllis Fordyce, Mrs. Norman Friese, Mrs. Thomas C. Gardner, Mrs. Gwen Garrison, Mrs. Otto H. Gartner, Mrs. Albert A. Green, Mrs. Thomas L Greenough, Mrs. William Hach, Mrs. Jack R. Haney, Mr. & Mrs. John Hansen, Comm. & Mrs. Norman C. Harvey, Mr. & Mrs. Frank Hattori, Mrs. Mark Hayfield, Mrs. Albert Hechinger, Mrs. Henry A. Hendrickson, Mrs. Thomas A. Holgate, Mrs. James Horrigan, Mrs. Marjorie E. Hussey, Miss Peggy Ann Jacobsson, Mrs. S. H. Jaffe, Mrs. Clifford O. Johnson, Mrs. Jay A. Jones, Mrs. Thomas B. L. Jordan, Mrs. M. A. Junejo, Mrs. Harry Kettering, Mr. & Mrs. Saburo Kikuchi, Mrs. Marcus O. Landon, Mrs. Herbert A. Larkins, Mrs. Hazel Lightbody, Mrs. Harold E. Lounsbury, Mr. & Mrs. L. A. Lundberg, Mrs. F. G. Macomber, Mrs. Gordon D. Marckworth, Mrs. Robert W. McConkey, Mrs. Wells McCurdy, Mrs. Merrill W. McKinstry, Mrs. K. Alvin Merendino, Mrs. Robert M. Miller, Mr. & Mrs. Keith Mirick, Mrs James H. Montgomery, Mrs. Merton Moran, Mrs. L. A. Moore, Mrs. William Morelock, Mrs. A. W. Morton, Mrs. Philip W. Mummert, Miss Toshiko Nagamatsu, Dr. & Mrs. Charles L. Nagel, Mr. & Mrs. Yoshio Nara, Mrs. Franklin Neff, Mr. & Mrs. Robert S. Nichols, Mrs. Edwin J. Nowak, Mrs. Raymond D. Ogden, Jr., Mr. & Mrs. Peter Ohtaki, Mrs. Whaley Patterson, Mrs. Keith N. Peterson, Robert L. Ringgenberg, Mr. & Mrs. John S. Robinson, Mrs. J. H. Siburg, Donald E. Smith, Mr. & Mrs. Lloyd Staudenraus, Mrs. George J. Stead, Mrs. Louis Stefano, Mrs. C. T. Stewart, Mike Stober, Mrs. Albert E. Stout, Mrs. Warren E. Swanson, Mrs. Bert S. Swift, Mr. & Mrs. Kazutaka Tamura, Mrs. B. J. Tappe, Miss Dorthea Taylor, Mrs. Bruce Tobin, Mr. & Mrs. Larry K. Todd, Mrs. G. W. Umphrey, Mr. & Mrs. Masato Uyeda, Mrs. L. J. Workman, Mrs. F. D. Zappalo.

We are also grateful to the following who have increased their membership dues to: *Life*—Mrs. Norton Clapp, Mrs. Ray Granston. *Supporting*—Mrs. Hugh S. Ferguson. *Contributing*—Mrs. Robert LaBow, Mrs. William J. McGowen, Mrs. Hugh F. McNiven. *Sustaining*—Mr. & Mrs. Albert Brauss.

Some of Our Favorites ☆

☆ *Won't You Send Us Yours?*

Rhododendron Conemaugh

Most any one Rhododendron I could easily claim as "favorite", for I am an indiscriminate lover of that genus. However, I would like to call attention to a comparatively little noted one called *Conemaugh* which is a small-leaved hybrid of *racemosum and mucronulatum* (Gable; 1934).

The plant itself is open in growth when very young but fills in to make a more compact shrub as it matures. It is upright, slightly irregular in habit, and will reach four feet in height in ten years.

It covers itself with lovely lavender-pink blossoms held in racemes from mid-February (in a warm season or location) through the month of March when there is little other color in the Rhododendron garden. It is a semi-deciduous; and although it retains a large portion of its small green leaves all winter, it colors enough in the fall to add another bright note at that season too.

I have a rather large group planted with orange yellow and deciduous azaleas in front of a south wall. The purplish blooms are gone before the oranges of the mollis appear, and the fall color of the two together is magnificent! The bright green new growth of the *Conemaugh* is added foliage interest for the orange and yellow flowers; still later, the retained leaves of the *Conemaugh* keep the area from bareness through the winter, so I find this grouping most satisfactory.

The shrub itself is completely hardy to this area. The early opened blossoms sometimes get nipped by frost, of course; but the profusion of color and the effectiveness of *Rhododendron Conemaugh* make it worth that bit of a gamble.

Marjorie (Mrs. H. P.) Clausing

BOOK REVIEW

This guide to the fascinating flora of the Mediterranean describes over 700 plant species, of which 311 are illustrated in full color by means of close-up photographs taken in the natural environment. 128 more species are pictured in line drawings, and there are 61 drawings of botanical details in the text. Clearly, the book's purpose is to arouse or stimulate the interest of intelligent laymen, especially tourists; accordingly, the selection of the species included is based, at least in part, on the likelihood that they will be seen by the tourist visiting the coastal zones and classical sites. However, some rarer plants—including several orchids—have (felicitously!) been included for reasons of sheer beauty. There is a brief introductory account of the climate of the Mediterranean region, its typical plant communities, and the effect of Man upon these.. In several places in the book, mention is made of the uses of certain plants, and references to them in the Bible or in the writings of the ancient scholars are quoted.

To what extent the book will suceed in its laudable purpose is hard to assess. The beautiful color photographs are, indeed, excellent persuaders, and the descriptions of the various species certainly seem adequate. However, no real keys are to be found in the book. This is understandable, because it could not be all-inclusive, but would not it have helped a little if some common names, in the most important languages of the region (Spanish, French, Italian, Greek and Arabic) had been included? Also, since selectivity was so crucial, certain rather insipid and "uncritical" pieces of information might just as well have been deleted—e.g., the use of a particular species against snakebite which surely might be considered of doubtful value. Conversely, in order to keep the reader's interest, other details should have been brought in even at the expense of space—e.g., the fascinating dispersal, survival, and pollination mechanisms which some Mediterranean plants display. Where so much space is devoted to the orchids, it seems a pity to omit the utterly fantastic pollination-mechanism of some **Ophrys** species, where the flowers imitate the females of certain bees or wasps and are treated accordingly by the male insects! However, these are minor complaints, perhaps based on idiosyncracies; a reviewer has no right to insist that an author write **his** kind of book!

The bibliography contains some regrettable spelling errors, and the index could stand improvement (**vide** such items as saffron, salep and kermes). Such imperfections can easily be taken care of in the future editions—to which we are looking forward, for we wish this book well.

B. J. D. MEEUSE

Books Acquired in 1965
(*Continued from Page 48*)

Flowers of Rumania, by Rodica Rarau-Bichiceanu, Dr. Mircea Bichiceanu; Meridiane, Publishing House, Bucharest (1964)

Flora Mediterranea, by Aldo Martello, Editore; Milano, Italy (1962) Vols. 1 & 2

Traite des Arbres & Arbrisseaux, by P. Mouillefert; Librairie des Sciences Naturelles; Part II. Paul Klincksieck, Editeur; Paris, France (1892-1898)

Traite des Arbres & Arbrisseaux, P. Mouillefert, etc. Atlas.

Illustrations of South American Plants, by John Miers; H. Brailliere, London (1849-57) Eng. Vol. II

American Camellia Yearbook 1966; American Camellia Society, Tifton, Georgia. Edited by Joseph H. Pyron

Flora of the Aleutian Islands, Vol. 1, by Eric Hulten; J. Cramer, Weinheim/Bergstr. Second Edn. (1960)

Guide to Vascular Flora of the Carolinas, by A. E. Radford, H. E. Ahles, C. R. Bell; University of N. Carolina, Chapel Hill, N.C. (1964)

Vegetative Propagation of Deciduous Azaleas

(Continued from Page 46)

avoid leaching out the plant material from over-watering. If an absence makes it impossible to do this, the frame can be closed and shaded and the cuttings will be safe.

Once the cuttings are rooted they should be moved from the closed frame or the mist and given a light feeding of water soluble fertilizer. They should be hardened off as much as possible before the cold weather comes. They must spend the winter in an unheated frame or some such protected place. They are still too tender to withstand hard freezing but they will not break into growth in the spring unless they have a cold resting period in the winter. It has been much more successful for me to leave the rooted plants in the flats until after they have made new growth in the spring. Those lifted and potted in the fall suffered some losses during the winter.

When they are lifted from the flats in the spring, they should be planted out in a nursery bed of well prepared garden soil to which some peat moss and sand have been added. They will appreciate a few light feedings with fish fertilizer during the summer. They must be kept moist through this first summer. Once established, they will require only normal care. The first year they will grow rather slowly but after that they come along very well.

It is, of course, much easier to grow deciduous azaleas from seed and where a large number are needed this would probably be the best method. If you use good hand-pollinated seed, this could produce some very fine plants also.

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Progress Report of the Planning Committee

(Continued from Page 40)

program for the Arboretum Center, listing the various needs it should meet and the facilities entailed. In 1965 a subcommittee was appointed to work with the University Architect in refining the project program. On February 14, 1966, the revised program was approved by the City-University Arboretum Planning Committee. It has now been submitted for review by the University Arboretum Advisory Committee, a consulting body to the Dean of the College of Forestry, who has direct supervision of the Arboretum.

Following approval by the Arboretum Advisory Committee, the program will move through normal channels for all University construction and will be transmitted to the architects upon final approval by the University administration.

The new Arboretum Floral Hall Center is to be designed to house a staff of sufficient size to administer and develop the Arboretum and to provide facilities for the anticipated visitors and inquiries and for the expanding educational program.

Among public areas will be a floral hall for displaying horticultural exhibits, a facility suitable for presenting illustrated lectures before large audiences and also for instruction sessions and meetings, a preparation room, kitchen, classrooms, and storage and service spaces. In addition, there will be offices, a library-museum-herbarium, laboratories, and work rooms for Arboretum staff, spaces for other activities, and common supporting facilities. An integral part of the project, of course, will be the provision of parking, relocation of roads, and bringing utilities to the Center.

The University Board of Regents has already appointed the architects—the two firms, working jointly, of Nelsen, Saben & Varey and Bain & Overturf. They will design the Center based on the criteria es-

tablished in the project program. Since esthetic integration into the site is a major requirement, and a problem requiring considerable thought, the layout of the Center cannot be foreseen at this time, being essentially an architectural decision. It may consist of one, or two, or a number of buildings, some of them perhaps on a single level, some on two levels. Since the Center is multi-purpose in nature, and its various elements are closely inter-related, the project constitutes an integrated unit.

Once the architects have completed plans and cost estimates have been prepared, the University will examine available funds to determine the feasibility of undertaking construction. If expenditures are proposed from the Arboretum Capital Improvement Trust Fund by the City-University Arboretum Planning Committee, plans will also be submitted to the Park Board and City Council for their approval.

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Grey, *Hardy Bulbs*
Symon Jeunne, *Natural Rock Gardening*
Arber, *The Gramineae*
RHS, *The Species of Rhododendrons*
Freeman-Mirford, *The Bamboo Garden*
Turrill, *The Royal Botanic Gardens, Kew.*
RHS, *The 1950 Conference on Camellias & Magnolias*
Woodcock & Steam, *Lilies of the World*
Evelyn Cecil, *London Parks & Gardens*
The Rhododendron Yearbooks from 1946 to 1965 of the Royal Horticultural Society
Bean, *Wall Shrubs & Hardy Climbers*
Am. Hort. Soc., *The Azalea Handbook, 1952*
C. O. Booth, *An Encyclopedia of Annual & Biennial Plants*
Hawworth Booth, *Hydrangeas*
Blasdale, *The Cultivated Species of Primula*
International Rhododendron Register
Beddall, *Hedges*
Armstrong, *British Grasses*
The RHS Conference on Shrubs
Perry, *Water Gardening*

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Unusual Trees In Seattle Parks

(Continued from Page 36)

finish lumber for houses, panels of carriages, cabinetwork, coffin boxes, pattern lumber and wooden ware. Early settlers often called it Canoewood because the Indians so habitually made their dugout canoes from its trunk.

In cultivation it ranks out in front in desirable features. Its orderly and rapid growth, combined with its handsome appearance plus exceptional immunity to insect and disease renders it one of the finest of large deciduous trees. The Tulip Tree derives its name from the unusual shape of its leaves which in outline remarkably resemble the flowers of a tulip. Oddly enough the darkened core or heartwood in cross section also repeats the motive identically. The flowers are large, brilliant greenish yellow with dashes of red and orange and quite similar in form to some of the magnolia blossoms.

COLORADO BLUE SPRUCE

(*Picea pungens*)

Not far from the Tulip Tree, and a short distance northward, stands a Colorado Blue Spruce, quite easily identified by its stiff sharp bluish needles. It measures 85 ft., with a trunk diameter of nearly 2 ft., and is about 60 years old.

This species is native to the Rocky Mountains, its range extending throughout parts of Colorado, Utah, Wyoming and New Mexico. Because it is a tree frequently found in alpine swamps and bogs in its native habitat it is often called Water Spruce. Being tolerant of cold temperatures it is extensively employed as an ornamental in Canada and the colder regions of the United States.

In its juvenile state it assumes quite striking form and color. Its dense pyramidal shape together with its powder blue needles make it a popular favorite for parks and gardens. With advancing age, however, it

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frequently loses its beauty, having a tendency to become barren at the bottom and somewhat straggly in general appearance. In cultivation these conditions can be postponed if not avoided entirely if ample space and light exposure are provided. Uncrowded specimens such as this one and in Volunteer Park particularly have retained their full attractiveness by not being crowded by other vegetation. Several outstanding specimens can be seen from the east windows of the Seattle Art Museum in Volunteer Park.

North Cascades Study Report

(Continued from Page 47)

North Cascade Primitive Area lying east of Ross Lake, as a Wilderness Area; and (3) the Mount Baker area with emphasis primarily for recreation, as at present.

A second alternative, recommended by the two Agriculture members, would create a National Recreation Area under Forest Service administration for the Eldorado Peaks-Stehekin Valley country, including Ross Lake. Combined with this would be wilderness classification for the North Cascade Primitive Area east and west of Ross Lake; and continuation of the present Glacier Peak Wilderness Area. Also as part of this alternative is continued Forest Service administration of the Mount Baker-Mount Shuksan areas, with emphasis on management for general-type recreation.

The third alternative, supported by the two Interior representatives, is a National Park which would include the Mount Baker-Mount Shuksan country, the Picket Range country, Ross Lake and the Eldorado Peaks-Stehekin Valley vicinity. Combined with this would be Forest Service-administered wilderness for the Glacier Peak Wilderness Area and for the part of North Cascade Primitive Area east of Ross Lake.

We plan to give the report our careful personal attention in an effort to resolve these differences in the best public interest.

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